

This Page Is Inserted by IFW Operations
and is not a part of the Official Record

BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images may include (but are not limited to):

- BLACK BORDERS
- TEXT CUT OFF AT TOP, BOTTOM OR SIDES
- FADED TEXT
- ILLEGIBLE TEXT
- SKEWED/SLANTED IMAGES
- COLORED PHOTOS
- BLACK OR VERY BLACK AND WHITE DARK PHOTOS
- GRAY SCALE DOCUMENTS

IMAGES ARE BEST AVAILABLE COPY.

**As rescanning documents *will not* correct images,
please do not report the images to the
Image Problem Mailbox.**



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

Handwritten signature

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/043,582	01/10/2002	Joseph Mazzochette	14123-5	7968

7590 11/07/2003

GLEN E. BOOKS, ESQ.
LOWENSTEIN SANDLER PC
65 LIVINGSTON AVENUE
ROSELAND, NJ 07068

EXAMINER

EASTHOM, KARL D

ART UNIT	PAPER NUMBER
----------	--------------

2832

DATE MAILED: 11/07/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/043,582

Applicant(s)

MAZZOCHETTE, JOSEPH

Examiner

Karl D Easthom

Art Unit

2832

AW

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 March 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) 7-9 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

Art Unit: 2832

1. Claims 7-8 are objected to as improperly numbered. They are treated below as claims 10-11, respectively, where claims 7-9 have been withdrawn previously.

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-3 and 10-11 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. It is not clear how claim 10 can depend from a cancelled claim 6. Claim 7 will be assumed to depend from claim 1 in order to expedite prosecution. For claim 1, it is not clear what product results from the LTCC-M process, where even LTCC has many variants, such that it is not clear what is structurally encompassed by the claim, or how the process makes the product distinct from any other method of making it.

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 1-3 and 10-11 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. There is no original description for low temperature co-fired ceramic-metal (LTCC-M).

Art Unit: 2832

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

6. Claims 1-3 are rejected under 35 U.S.C. 102(e) as being anticipated by Kawase '723. Kawase discloses the invention at Figs 1 and 8A with insulating layers and thermistor sheets 1 (green sheets) (col. 3, lines 48-58), fired at col. 5, lines 1-35 at 1000C, and metalization 5a, 5b. (See cols. 1-2 of Haq 6,284,080 for the definition, and col. 5, lines 1-3 discloses that "low temperature" means about 600- 1000 degrees C). For claim 2, the via is shown at Figs. 8a-8b. For claim 3, "about .001 inch" is about .03mm. The total thickness of the Kawase unit is .9mm at col. 4, lines 10-15, and with about 10 sheets shown at Fig. 1 at most, this translates to about .09mm per sheet.

Art Unit: 2832

7. Claims 1 and 3 are rejected under 35 U.S.C. 102(b) as being anticipated by Abe '390. Abe discloses the claimed invention at Fig. 2 where thermistors and insulators are 2a, 5, with metallization 5a, 5b on the opposed major surfaces of the thermistors 1. For claim 3, the thickness is col. 3, lines 49-51. As noted above, it is not clear how the product is distinct so that LTCC is met here.

8. Claims 1-2 are rejected under 35 U.S.C. 102(e) as being anticipated by Furukawa et al. Furukawa discloses insulating layers 17 (top and bottom) with thermistors 15 green sheets, fired at col. 3, lines 15-20 at 1000C, metalization 20, 21, vias 21. (See cols. 1-2 of Haq 6,284,080 for the definition, and col. 5, lines 1-3 discloses that "low temperature" means about 600- 1000 degrees C). For claim 3, "about .001 inch is about .03mm. The total thickness of the Kawase unit is .9mm at col. 4, lines 10-15, and with about 10 sheets shown at Fig. 1 at most, this translates to about .09mm per sheet

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claim 10 is rejected under 35 U.S.C. 102(e) as anticipated by Kawase '723 or Furukawa et al., in the alternative, under 35 U.S.C. 103(a) as obvious over Kawase '091 in view of Anew ("THICK FILM TECHNOLOGY"). The claimed invention is disclosed as noted above except for the material of the insulator having an organic binder and glass. Kawase discloses a glass

Art Unit: 2832

paste for insulators at bottom of col. 6, as does Furukawa et al. at col. 3, lines 1-27.. According to Agnew at page 6, pastes all consist of three parts, one of which is an organic binder, so if the paste does not inherently have the organic binder to meet 102 rejection, it would have been obvious to employ one to bind the glass in the normal manner understood for pastes since Kawase discloses a glass paste.

11. Claim 1 is rejected under 35 U.S.C. 102(b) as anticipated by Sunahara JP 4-320321 or, in the alternative, under 35 U.S.C. 103(a) as obvious over Sunahara in view of Haq. The invention is disclosed at the abstract with insulating layers 4a-4d, electrodes 2a-2d and thermistors 1a-1e. It is fired at low temperature - 900C at par. 5, or 1000C at par. 16, meeting LTCC. Or in the alternative, Haq discloses at cols. 1-2 that there are only two ways to make devices such as that of Sunahara, LTCC or HTCC, so that it would have been obvious to form them using LTCC where it is disclosed as inexpensive at col. 2.

12. Claims 1-3 are rejected under 35 U.S.C. 102(b) as anticipated by Abe et al. '390, Kawase '723, or Furukawa et al. (as noted above) , or, in the alternative, under 35 U.S.C. 103(a) as obvious over either in view of Haq. The invention is disclosed as noted above as regards the 102 alternative as to the respective claims noted thereat, the abstract with insulating layers 4a-4d, electrodes 2a-2d and thermistors 1a-1e. Or in the 103 alternative, assuming the LTCC is not met, Haq discloses at cols. 1-2 that there are only two ways to make devices such as that of Abe or Kawase, either LTCC or HTCC, so that it would have been obvious to form them using LTCC where it is disclosed as inexpensive at col. 2.

13. Claim 11 is rejected under 35 U.S.C. 103(a) as obvious over Kawase '723 (or Kawase with Haq as noted) in view of 5332981 and known admitted prior art. The claimed invention

Art Unit: 2832

is disclosed as noted above except for the material of the circuit. That circuit is known from the noted secondary art as admitted by applicant at page 4, while Kawase discloses at bottom of col. 6, that any parallel and series combination can be made into the desired circuit, so that it would be obvious to employ such a well known circuit to compensate as desired given the circuits generally disclosed by Kawase

14. Applicant's arguments filed 7/16/03 have been considered but are not persuasive.

Applicant argues that the LTCC-M process is not disclosed by the prior art of record. This is not correct where applicant argues no structural distinction accorded the process and applicant has the burden as noted above. However, a ceramic is required by the claim, and insulators layered, so that Chiang, Berg and Hogge are removed. Kawase discloses LTCC which is interpreted as the same.


15. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Art Unit: 2832

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Karl Easthom whose telephone number is (703)308-3306. The examiner can normally be reached on M-Th. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Elvin Enad, can be reached on (703)308-7619. The fax phone number for the organization where this application or proceeding is assigned is (703)308-7722. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.


KARL D. EASTHOM
PRIMARY EXAMINER